

**LUBRIONE™**  
INTERNALLY LUBRICATED  
FORMULATIONS

# LubriOne™ Internally Lubricated Formulations

PRODUCT DESCRIPTION	UNITS	TEST METHOD	NN-000/15T BLACK	NN-20GF-10GB/13T-2S BLACK	NN-30GF/10T WHITE	LB8900-0001 30GF/15T NATURAL	LB8900-0002 30GF/13T-2S NATURAL	LB8900-0003 18T-2S NATURAL	ATT-000/5T BLACK	AT-000/18T-2S NATURAL	5209 FPL 20 NATURAL	PS-30GF/2S NATURAL	LB5210-0237 1B NATURAL	PC-10CF/15T BLACK
Base Polymer			PA 66	PA 66	PA 66	PK	PK	PK	POM	POM	POM	PBT	PP	PC
<b>General Properties</b>														
Specific Gravity	g/cm <sup>3</sup>	ASTM D792	1.23	1.46	1.47	1.56	1.55	1.33	1.38	1.47	1.51	1.54	1.13	1.31
Molding Shrinkage		ASTM D955												
Flow	%		1.0–2.0	0.20–0.50	0.50–1.0	0.30–0.60	0.20–0.40	1.7–2.3	1.5–2.0	2.0–3.0	2.0–3.0	0.20–0.40	0.10–0.30	0.10–0.30
Water Absorption (23°C, 24 hr.)	%	ASTM D570	0.8	–	0.050–1.0	0.3	0.4	0.4	0.050	–	0.050	–	–	–
<b>Mechanical Properties</b>														
Tensile Modulus <sup>(1)</sup>	MPa	ASTM D638	2650	9650	9790	8050	7380	1250	965	1770	2420	8620	4140	–
Tensile Strength <sup>(1)</sup> (Yield)	MPa	ASTM D638	61.4	119	122	119	94	47	35	40	45	108	72.4	90
Tensile Elongation <sup>(1)</sup> (Break)	%	ASTM D638	3.0–5.0	1.0–3.0	1.5	3	2	35	40	30	26	3	–	–
Flexural Modulus	MPa	ASTM D790	2760	6890	6890	7380	6410	1300	1080	1740	1790	6690	4840	5500
Flexural Strength	MPa	ASTM D790	108	172	214	182	167	55	41.4	62.7	68.3	165	110	130
<b>Coefficient of Friction</b>		ASTM D1894												
vs. Steel – Dynamic			0.43	0.59	0.14	0.10	0.11	0.12	0.12	0.10	0.12	0.14	0.16	0.14
vs. Steel – Static			0.25	0.46	0.18	0.15	0.12	0.19	0.11	0.14	0.13	0.24	0.17	0.17
<b>Impact</b>														
Notched Izod Impact (23°C, 3.18 mm, Injection Molded)	J/m	ASTM D256A	41	64 <sup>(6)</sup>	110	107	107	70	80	37	37	75	–	69
<b>Thermal Properties</b>														
<b>Heat Deflection Temperature</b>		ASTM D648												
0.45 MPa	°C		215 <sup>(6)</sup>	–	250	215	216	184	152	151 <sup>(6)</sup>	153 <sup>(6)</sup>	218 <sup>(6)</sup>	–	–
1.8 MPa	°C		65 <sup>(6)</sup>	239 <sup>(7)</sup>	244 <sup>(6)</sup>	210	210	75	94	81.1 <sup>(6)</sup>	88	197 <sup>(6)</sup>	–	135 <sup>(5)</sup>
<b>Electrical Properties</b>														
Surface Resistivity	ohms/sq	ASTM D254	–	–	–	1.30x10 <sup>12</sup>	1.9x10 <sup>12</sup>	5.2x10 <sup>12</sup>	–	–	–	–	–	1.0x10 <sup>9</sup>
Dielectric Strength (Short Time)	kV/mm		–	–	8.5	–	–	–	–	–	–	–	–	–
<b>Flammability</b>														
Flame Rating	Class	UL 94	HB	–	–	HB	HB	HB	–	HB	–	–	–	–

**NOTES** (1) Type I, 5.1mm/min (2) Type I, 21.3 mm/min (3) Type I, 50 mm/min (4) Type I, 5.1mm/min, Break (5) 3.2 mm thick, Unannealed (6) 6.35 mm thick, Unannealed (7) 3.2 mm thick, Annealed

# LubriOne™ Internally Lubricated Formulations - PTFE-Free

PRODUCT DESCRIPTION	UNITS	TEST METHOD	LB6000-5024 RS HI Natural	LB6000-5021 RS S1 Black	LB6000-5021 RS X2 Black	LB6000-5019 X1 Black	LB6700-5001 RS AF Black	NN-000/01M Black SO	REC LB6600-5030 RS Grey	LB3300-5010 RS Natural	LB3300-5005 RS Natural	REC LB3220-5001 RS C Natural X1	LB8900-5010 GP Grey	LB8900-5006 RS PE Natural	LB8900-5004 RS PE Natural	LB4200-5022 Black	LB4200-5023 Natural
Base Polymer			PA 6				PA6/PA66	PA66		PBT		PC	PKE			POM	
Lubricant			UHMWPE <sup>1</sup>	UHMWPE	UHMWPE	UHMWPE	UHMWPE	MoS2 <sup>2</sup>	Graphite	UHMWPE	UHMWPE	UHMWPE	Graphite	UHMWPE	UHMWPE	MoS2	UHMWPE
Filler type			GF10	GF30	GF30	GF50	GF50	Unfilled	GF33	GF20	MI20	GF10	Unfilled	GF20	GF30	Unfilled	Unfilled
<b>General Properties</b>																	
Specific Gravity	g/cm <sup>3</sup>	ISO 1183	1.18	1.35	1.39	1.55	1.58	1.14	1.44	1.42	1.46	1.23	1.26	1.34	1.43	1.4	1.35
<b>Mechanical Properties</b>																	
Tensile Modulus (23°C)	MPa	ISO 527-1	4250	9500	9000	15500	16600	3500	10600	6300	3330	4000	1630	5300	9250	2470	2150
Tensile Strength (Yield, 23°C)	MPa	ISO-527-2	97	150	160	205	200	85	164	102	55	60	60	108	99.1	55	50
Tensile Elongation (Break, 23°C)	%	ISO-527-2	12	2.5	3	2.7	2.4	3.4	2.0	4.2	8	2.5	46	3.7	1.5	11	11
Flexural Strength (23°C)	MPa	ISO 178	103	-	-	285	265	108	215	127	78	85	38	155	117	73	68
Flexural Modulus (23°C)	MPa	ISO 178	3250	-	-	12400	11100	2690	9000	4700	3000	3100	1380	4600	5450	2210	2070
<b>Impact</b>																	
Charpy Notched Impact Strength (23°C, Injection Molded)	kJ/m <sup>2</sup>	ISO 179	14	12	10	15	10	3	6	7.7	4.3	12	15	10	7.6	8	5
Charpy Unnotched Impact Strength (23°C, Injection Molded)	kJ/m <sup>2</sup>	ISO 179	82	55	61	75	60	65	50	47	69	-	NB	63	36	NB	NB
<b>Thermal Properties</b>																	
Deflection Temperature Under Load 1.8 Mpa, Unannealed	°C	ISO 75-2/A	107	-	-	204	-	73	235	-	-	-	90	210	204	86	80
<b>Coefficient of Friction (CoF) &amp; Wear Rate</b>																	
CoF vs. Steel - Dynamic		ASTM D1894	-	0.212	0.186	-	-	-	-	-	-	-	-	-	-	-	-
CoF vs. Steel - Static		ASTM D1894	-	0.237	0.183	-	-	-	-	-	-	-	-	-	-	-	-
CoF (20min 0.2 m/s)	g/min	ASTM G77	-	-	-	-	-	-	-	-	-	-	-	0.79	0.79	-	-
Wear Rate (20h, 1m/s)	g/min	ASTM G77	-	-	-	-	-	-	-	-	-	-	-	1.02E-05	1.89E-05	-	-
Wear Rate (PV=2500)	(in3-min/ ft-lb-hr) *10-10	ASTM D3702	-	125	175	-	-	-	-	-	-	-	-	-	-	-	-
<b>Flammability</b>																	
Flame Rating		UL 94	-	-	-	-	-	-	-	HB	HB	V2 @ 3mm	-	-	-	-	-

**NOTES** \*ASTM D3702 (PV=2500, against 1018-steel)  
<sup>1</sup>UHMWPE - ultra high molecular weight polyethylene  
<sup>2</sup>MoS2 - molybdenum disulphide



## EXPLORE WEAR RESISTANCE

LubriOne internally lubricated thermoplastic polymers have been specifically designed to improve tribological performance in components, offering low coefficient of friction and improved wear-resistance properties. These properties, coupled with a wide array of base engineering thermoplastics, deliver the distinct benefits of LubriOne:

- Reduced friction and heat buildup between interacting surfaces
- Reduced noise and vibration among components in relative motion
- Reduced weight and improved design freedom
- Lower long-term maintenance costs when grease and other lubricants are eliminated

To learn more about LubriOne™ internally lubricated solutions, contact Avient at +1.844.4AVIENT (1.844.428.4368)

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